

# MICRO ELECTRONICS

BC445  
BC446

SILICON  
EPITAXIAL TRANSISTOR

## DESCRIPTION

BC445 (NPN) and BC446 (PNP) are silicon planar transistor designed for use as high voltage driver and output transistor. Particularly suitable as power darlington drivers.

TO-92F



CBE

## ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage	$V_{CE0}$	60V
Collector-Base Voltage	$V_{CB0}$	60V
Emitter-Base Voltage	$V_{EB0}$	5V
Collector Current-Continuous	$I_C$	300mA
Total Power Dissipation @ $T_A=25^\circ C$	$P_{tot}$	625mW
Derate above $25^\circ C$		5mW/ $^\circ C$
Total Power Dissipation @ $T_C=25^\circ C$	$P_{tot}$	1.5W
Derate above $25^\circ C$		12mW/ $^\circ C$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150 $^\circ C$

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	60			V	$I_C=1mA$ $I_B=0$
Collector-Base Breakdown Voltage	$BV_{CB0}$	60			V	$I_C=100\mu A$ $I_E=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	5			V	$I_E=10\mu A$ $I_C=0$
Collector Cutoff Current	$I_{CB0}$			100	nA	$V_{CB}=30V$ $I_E=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.1	0.25	V	$I_C=100mA$ $I_B=10mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.85		V	$I_C=100mA$ $I_B=10mA^*$
Base-Emitter Voltage	$V_{BE}$		0.8	1.2	V	$I_C=100mA$ $V_{CE}=5V^*$
Current Gain-Bandwidth Product	$f_T$	100	250		MHz	$I_C=50mA$ $V_{CE}=5V$ $f=100MHz$
Output Capacitance	$C_{ob}$		3		pF	$V_{CB}=10V$ $I_E=0$
Input Capacitance	$C_{ib}$		16		pF	$V_{EB}=0.5V$ $I_C=0$

\* Pulse Test : Pulse Width = 300 $\mu s$ , Duty Cycle = 2%.

## D.C. Current Gain ( $H_{FE}$ ) @ $V_{CE}=5V$

at $I_C$ (Pulsed)	Full Range		Group A		Group B	
	min	max	min	max	min	max
2mA	50	460	120	220	180	460
10mA	50		100		160	
100mA	50		60		90	

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